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1. A method in a data processing system, comprising:
 rendering a three-dimensional environment;
 receiving shared data including orientation
information from a server; and
 displaying a virtual representation of the shared
data in the three-dimensional environment based on the
orientation information.
2. The method of claim 1, wherein the shared data
includes two-dimensional data.
3. The method of claim 2, wherein the virtual
representation is a surface texture image.
4. The method of claim 3, wherein the three-dimensional
environment includes at least one three-dimensional
object and the step of displaying a virtual
representation comprises:
 applying the surface texture image to the
three-dimensional object.
5. The method of claim 4, wherein the orientation
information identifies the three-dimensional object.
6. The method of claim 2, wherein the two-dimensional
data comprises one of a word processing document, a
spreadsheet document, and a presentation document.

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7. The method of claim 2, wherein the two-dimensional data comprises a uniform resource locator.
8. The method of claim 1, further comprising executing an external application to decode the shared data to form the virtual representation of the shared data.
9. The method of claim 8, wherein the external application is a plug-in application.
10. The method of claim 8, wherein the shared data includes a wrapper application and the step of executing an external application comprises executing the wrapper application.
11. The method of claim 1, further comprising:
performing a modification to the shared data;
generating a shared data update event indicating the modification; and
sending the shared data update event to the server.
12. The method of claim 1, wherein the shared data includes access control information indicating an access control level for a user.
13. The method of claim 12, wherein the access control level is one of ownership, authorship, viewership, monitorship, and blind.
14. The method of claim 12, further comprising:

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receiving a request to modify the shared data; and
determining whether the user has a sufficient access
control level.

15. The method of claim 14, further comprising modifying
the shared data if the user has a sufficient access
control level.

16. The method of claim 14, further comprising notifying
the user of insufficient access control if the user does
not have a sufficient access control level.

17. The method of claim 1, further comprising:
receiving a shared data update event indicating a
modification to the shared data;
modifying the shared data according to the shared
data update event to form modified data; and
displaying a modified representation of the modified
data in the three-dimensional environment.

18. The method of claim 1, wherein the shared data is
three-dimensional data.

19. The method of claim 18, wherein the virtual
representation is a three-dimensional object.

20. The method of claim 18, wherein the orientation
information identifies a location and orientation for the
virtual representation in the three-dimensional
environment.

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21. A method in a data processing system, comprising:
rendering a three-dimensional environment;
receiving shared data including access control
information indicating an access control level for a user
from a server; and
displaying a virtual representation of the shared
data in the three-dimensional environment based on the
access control level of the user.

22. The method of claim 21, wherein the access control level is one of an ownership access control level, an authorship access control level, a viewership access control level, a monitorship access control level, and a blind access control level.

23. The method of claim 21, further comprising:
receiving a request to modify the shared data; and
determining whether the user has a sufficient access
control level.

24. The method of claim 23, further comprising modifying the shared data if the user has a sufficient access control level.

25. The method of claim 24, further comprising:
generating a shared data update event indicating the
modification; and
sending the shared data update event to the server.

26. The method of claim 23, further comprising notifying the user of insufficient access control if the user does

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not have a sufficient access control level.

27. The method of claim 21, further comprising:
receiving a shared data update event indicating a modification to the shared data;
modifying the shared data according to the shared data update event to form modified data; and
displaying a modified representation of the modified data in the three-dimensional environment based on the access control level of the user.

28. A method in a data processing system, comprising:
rendering a three-dimensional environment from the perspective of a first participant, the three-dimensional environment including an avatar representing a second participant;
receiving a selection of the avatar from the first participant;
receiving a selection of a file to be transferred from the first participant; and
transferring the file to a client computer associated with the second participant.

29. The method of claim 28, further comprising:
sending a transfer request to the second participant;
receiving an acceptance from the second participant;
wherein the step of transferring the file to a client computer is performed in response to receiving the acceptance.

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30. An apparatus, comprising:
 rendering means for rendering a three-dimensional environment;
 receipt means for receiving shared data including orientation information from a server; and
 display means for displaying a virtual representation of the shared data in the three-dimensional environment based on the orientation information.
31. The apparatus of claim 30, wherein the shared data includes two-dimensional data.
32. The apparatus of claim 31, wherein the virtual representation is a surface texture image.
33. The apparatus of claim 32, wherein the three-dimensional environment includes at least one three-dimensional object and the display means comprises:
 means for applying the surface texture image to the three-dimensional object.
34. The apparatus of claim 33, wherein the orientation information identifies the three-dimensional object.
35. The apparatus of claim 30, further comprising execution means for executing an external application to decode the shared data to form the virtual representation of the shared data.
36. The apparatus of claim 35, wherein the external

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application is a plug-in application.

37. The apparatus of claim 36, wherein the shared data includes a wrapper application and the execution means comprises means for executing the wrapper application.

38. The apparatus of claim 30, further comprising:
means for performing a modification to the shared data;

means for generating a shared data update event indicating the modification; and

means for sending the shared data update event to the server.

39. The apparatus of claim 30, further comprising:
means for receiving a shared data update event indicating a modification to the shared data;

means for modifying the shared data according to the shared data update event to form modified data; and

means for displaying a modified representation of the modified data in the three-dimensional environment.

40. The apparatus of claim 30, wherein the shared data is three-dimensional data.

41. The apparatus of claim 40, wherein the virtual representation is a three-dimensional object.

42. The apparatus of claim 40, wherein the orientation information identifies a location and orientation for the virtual representation in the three-dimensional

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environment.

43. An apparatus, comprising:

rendering means for rendering a three-dimensional environment;

receipt means for receiving shared data including access control information indicating an access control level for a user from a server; and

display means for displaying a virtual representation of the shared data in the three-dimensional environment based on the access control level of the user.

44. The apparatus of claim 43, wherein the access control level is one of an ownership access control level, an authorship access control level, a viewership access control level, a monitorship access control level, and a blind access control level.

45. The apparatus of claim 43, further comprising:

means for receiving a request to modify the shared data; and

means for determining whether the user has a sufficient access control level.

46. The apparatus of claim 45, further comprising means for modifying the shared data if the user has a sufficient access control level.

47. The apparatus of claim 46, further comprising:

means for generating a shared data update event

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indicating the modification; and

means for sending the shared data update event to the server.

48. The apparatus of claim 45, further comprising means for notifying the user of insufficient access control if the user does not have a sufficient access control level.

49. The apparatus of claim 43, further comprising:

means for receiving a shared data update event indicating a modification to the shared data;

means for modifying the shared data according to the shared data update event to form modified data; and

means for displaying a modified representation of the modified data in the three-dimensional environment based on the access control level of the user.

50. An apparatus, comprising:

rendering means for rendering a three-dimensional environment from the perspective of a first participant, the three-dimensional environment including an avatar representing a second participant;

first receipt means for receiving a selection of the avatar from the first participant;

second receipt means for receiving a selection of a file to be transferred from the first participant; and

transfer means for transferring the file to a client computer associated with the second participant.

51. The apparatus of claim 50, further comprising:

means for sending a transfer request to the second

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means for receiving an acceptance from the second participant;

wherein the transfer means transfers the file to the client computer in response to the means for receiving the acceptance.

52. A computer program product, in a computer readable medium, comprising:

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instructions for rendering a three-dimensional
environment;
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instructions for receiving shared data including orientation information from a server; and

instructions for displaying a virtual representation of the shared data in the three-dimensional environment based on the orientation information.

53. A computer program product, in a computer readable medium, comprising:

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instructions for rendering a three-dimensional
environment;
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instructions for receiving shared data including access control information indicating an access control level for a user from a server; and

instructions for displaying a virtual representation of the shared data in the three- dimensional environment based on the access control level of the user.

54. A computer program product, in a computer readable medium, comprising:

instructions for rendering a three-dimensional

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Figure 1 consists of 12 histograms arranged in a single column. Each histogram represents the distribution of the number of non-zero elements in the vector x for a specific value of n . The x-axis for all histograms is labeled 'x' and ranges from 0 to 120. The y-axis is labeled 'count' and ranges from 0 to 100. The histograms are for $n = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120$. As n increases, the distribution of x becomes more concentrated around zero, with the peak count increasing significantly.

instructions for transferring the file to a client computer associated with the second participant.